AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An extended ε -filter image processing apparatus, named extended ε -filter, comprising:

an input section for receiving an input image;

a calculation section for calculating the a small-amplitude variation component of the input image;

a signal processing section for adding the output of small-amplitude variation component calculated by the calculation section to the input signal image to provide a wrinkle enhanced image, and for subtracting it the small-amplitude variation component from the input signal image to provide a smooth skin image; and

an output section for outputting both of at least one of the wrinkle enhanced image and the smooth skin image, or outputting either of the wrinkle enhanced or the smooth skin image according to the an instruction from a correction instruction section.

2. (Currently Amended) The extended ε -filter image processing apparatus as claimed in claim 1, wherein the calculation section calculates the small-amplitude variation component of

the input image according to <u>the equation</u> $\underline{\sum_i \sum_j a_{i,j} \cdot F(x(m,n) - x(m+i, n+j))}$ ~~the second term~~

~~of an expression (1) which is expressed by:~~ <u>, wherein</u>

$$y(m,n) = x(m,n) - \sum_i \sum_j a_{i,j} \cdot F(x(m,n) - x(m+i, n+j)),$$

~~where~~

    y(m,n) is the output image;

    x(m,n) is the input image;

    $a_{i,j}$ is a weight coefficient; and

    F (x) is a nonlinear function, in which F(x)=0 when ~~$|X| > \varepsilon_0$~~ <u>$|x| > \varepsilon_0$</u>.

3. (Currently Amended) An image processing apparatus comprising primary and secondary ε-filter blocks and an addition section[[:]]<u>,</u>

    [[a]] <u>the</u> primary ε-filter block ~~including~~ <u>comprising</u>:

        an input section for receiving an input image;

        a calculation section for calculating ~~the~~ <u>a</u> small-amplitude variation component of the input image by a ~~small~~ <u>first</u> ε value~~, given as ε h~~ <u>εh</u>;

        a subtracting section for subtracting the small-amplitude variation component from the input image to provide a smooth skin image; and

        an output section for outputting the smooth skin image;

    [[a]] <u>the</u> secondary ε -filter block ~~including~~ <u>comprising</u>:

        an input section for receiving the input image;

a calculation section for calculating ~~the~~ a minute-amplitude variation component

of the input image by a ~~minute~~ second ε value ~~given as εl~~ εL which is less than [[ε h]]

the first ε value εh; and

an output section for outputting the minute-amplitude variation component; and

the addition section ~~for~~ adding the minute-amplitude variation component output [[of]]

from the secondary ε-filter block to the smooth skin image output [[of]] from the primary ε-filter

block to obtain ~~the~~ a natural looking ~~"smooth-skin"~~ smooth skin image preserving ~~the~~ a grain and

texture of the skin.

4. (Currently Amended) An image processing apparatus comprising an extended ε -filter

block, an ordinary ε -filter block and a minute amplitude component adjustment section,

the extended ε -filter block~~, including~~ comprising:

an input section for receiving an input image;

a calculation section for calculating ~~the~~ a small-amplitude variation component of

the input image by a ~~small~~ first ε value~~, given as ε h~~ εh ;

a signal processing section for adding the small-amplitude variation component

output [[of]] from the calculation section to the input signal to provide a wrinkle

enhanced image, and for subtracting [[it]] small-amplitude variation component from the

input signal to provide a smooth skin image; and

an output section for outputting ~~either of~~ the wrinkle enhanced or the smooth skin

image according to ~~the~~ an instruction from a correction instruction section;

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the ~~second~~ ordinary ε -filter ~~including~~ comprising:

an input section for receiving the input image;

a calculation section for calculating ~~the~~ a minute-amplitude variation component of the input image by a ~~minute~~ second ε value ~~given as εl~~ εL which is less than [[ε h]] the first ε value εh; and

an output section for outputting the minute-amplitude variation component; and

[[a]] the minute amplitude component adjustment section ~~for~~ adding the minute-amplitude variation component output from the ordinary ε -filter to the wrinkle enhanced or the smooth skin image output from the extended ε -filter block or subtracting ~~the secondary block's output to or from the primary block's output~~ the minute-amplitude variation component output from the ordinary ε -filter from the wrinkle enhanced or the smooth skin image output from the extended ε -filter block, according to the correction instruction in order to obtain ~~the~~ a natural looking smooth or wrinkle enhanced skin image with ~~the~~ a grain and texture of a skin held in an original state.

5. (Currently Amended) An image processing apparatus ~~getting~~ receiving arbitrarily two amplitude values as parameters, comprising:

an input section for receiving an input signal;

a calculation section for calculating selectively ~~the~~ a variation component having ~~the~~ an amplitude between the [[2]] two amplitude values given as β h and β l from the input signal;

a signal processing section for adding ~~or subtracting~~ the variation component to ~~or from~~ the input signal <u>or subtracting the variation component from the input signal,</u> according to ~~the~~ <u>an</u> instruction from ~~the~~ <u>a</u> correction instruction section in order to obtain ~~the~~ <u>a</u> natural looking smooth or wrinkle enhanced skin image with ~~the~~ <u>a</u> grain and texture of a skin held in an original state; and

an output section for outputting ~~both~~ <u>at least one</u> of the smooth skin and the wrinkle enhanced image~~, or outputting either of them~~ according to the instruction.